and expiratory, and in a previous paper the author has made the statement that there is no example of a muscle acting diametrically opposite to its usual direction of action, but the latissimus dorsi seems to be an exception. The latissimus dorsi has an extensive origin, and it is suggested that in the action of expiration the part of the muscle which arises from the iliac crest and the spine compresses the abdominal cavity and assists the expiratory movement, while in inspiration the action is produced by the part of the muscle which arises from the three or four lower ribs, elevating them. This respiratory movement is the bilateral action of the muscle, and always affects the muscles of both sides in health.

The unilateral action of the muscle is that on the upper limb, and it is best brought about by making a patient adduct to the side of the chest, the upper limb placed in the horizontal position, and in this movement the muscle acts quite independently of its fellow of the other side.

As a cough can be voluntary or reflex, we have three conditions of action of the muscle, but in the case of a sneeze, which is an involuntary expiration, only two. We have, therefore:

1. Reflex coughing or sneezing; bilateral action.
2. Voluntary coughing; bilateral.
3. Voluntary adduction of humerus; unilateral.

The next question was to examine as to the presence or absence of these actions in hemiplegia. Examination of a dozen cases revealed in all but two the following conditions:

1. In reflex coughing the expiratory action of the latissimus dorsi was about equal on the two sides.
2. In voluntary coughing the action of the latissimus dorsi was obtained on the paralyzed side, but frequently diminished in action or occurred later than on the normal side.
3. In all cases the unilateral voluntary action of adducting the shoulder-joint was absent. PATRICK.

PATHOLOGY.

92. THE MICRO-ORGANISM OF SIMPLE POSTERIOR BASIC MENINGITIS IN INFANTS. Geo. F. Still (British Med. Journal, 1898, No. 1972, p. 1157).

The simple posterior basic meningitis of infants—a non-tuberculous form of meningitis which occurs mostly within the first year of life, and affects especially the posterior portion of the base of the brain and also the spinal cord—is a condition of no great rarity. In the earlier half of the year it is always more or less prevalent in London, and there can be little doubt that many cases which appear to be tuberculous meningitis are in reality cases of simple posterior basic meningitis. It has been shown on clinical grounds that there is good reason for believing that this form of meningitis is a specific disease, and the author's observations from the pathological and bacteriological standpoint seem to confirm this view.

The cases may be divided into three groups: (i) Those fatal within six weeks—that is, during the acute or inflammatory stage; (ii) those fatal at the end of three or four months—that is, during the chronic or hydrocephalic stage; (iii) those in which recovery occurs.

Corresponding with these variations in the duration of the disease, there are differences of pathological appearance in groups (i) and (ii). In the former there is much lymph over the base of the brain and on the spinal cord; in the latter there may be no trace whatever of lymph, only thickening and opacity of the pia-arachnoid, with adlesions especially between the medulla and cerebellum. These are briefly the morbid changes found, and it is important that it should be realized that there are such differences in the morbid anatomy of this disease in its early and in its late stages. In the early stage the condition has not been sufficiently differentiated from what one might call "secondary" suppurative meningitis, particularly the common form due to the pneumococcus. In the late stage it has almost certainly been labeled sometimes as healed tuberculous meningitis, sometimes as a chronic syphilitic change.

In the simple posterior basic meningitis of infants it is almost invariably the case that no lesion, except such accidental complications as occur in any prolonged disease during the last few days or hours of life, is found in the viscera; whereas in other forms of meningitis exudation in the meninges is almost invariably secondary to some obvious focus of infection elsewhere. In fifteen consecutive cases of suppurative meningitis which were examined by the author, all except one showed an obvious primary focus of infection, while in fifteen consecutive cases of posterior basic meningitis not a single one showed inflammatory lesions elsewhere, except two, in which a lymph exudation was present about certain tendon sheaths. This fact, together with the constancy of its clinical and pathological features, seems to point to its being a specific disease due to some micro-organism. In seven out of a series of eight cases reported at the Pathological Society of London last year the author found a diplococcus, which, so far as the evidence went, appeared to be the specific cause of the disease. The one case which proved sterile died three and a half months after the onset of the disease.

Since then he has made four post-mortem examinations of infants with this disease, and in two of these the micro-organism was present in the exudation at the base of the brain, apparently in pure growth, but owing probably to the use of strong carbolic acid for the sterilization of instruments no cultures were obtained; the other two cases died respectively on the seventy-fifth and eighty-ninth day after the onset of the disease, when all exudation had already disappeared.

In another case he has recently obtained pure cultures of the micro-organism from the cerebro-spinal fluid taken from the lateral ventricles during life, in the course of an operation for the establishment of artificial drainage. It would seem, therefore that the micro-organism is present during the earlier stage of the disease, but disappears later.

For the peculiar features of this micro-organism the original must be consulted. PATRICK.

93. MÉNINGITE CÉRÉBRO-SPINALE ÉPIDÉMIQUE (Epidemic Cerebro Spinal Meningitis). D. Assimis (La Presse médicale, May 28, 1898, p, 289).

In 1897, during the month of November, a few sporadic cases,of this disease were observed. During the months of November and January these increased until an actual epidemic was in progress. The author observed altogether 16 cases, with 10 recoveries and 6 deaths. Of the latter, two cases came to autopsy. Of the 16 cases, 5 had the comatose form of the disease. In all cases, albumin was present in the urine, disappearing with recovery. Five cases had the foudroyant form. The symptoms commenced with chills, high fever reaching 41° C., intense headache, delirium, vomiting and general spasms of the whole body. In one case the body was covered with petechiæ varying in size from a franc to a 50-centime piece. Three cases had an abortive form of the disease, commencing with fever, headache and